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HISTORY AND PHILOSOPHY OF SCIENCE

NICHES OF NEBRASKA SCIENTISTS.
CHARLES EDWIN BESSEY (1845-1915)

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INTRODUCTION

When I recently undertook to pay tribute to Dr. Charles E. Bessey, I realized that appraisals of his long years of devoted, manifold services to Nebraska and the nation already had been written by qualified contemporaries. It soon became apparent that I could not add significantly to the two biographies by Raymond J. Pool, written in 1915, the year of Bessey's death, and in 1919, the University semi-centennial year, nor to the illustrated account, published in Nebraska History in 1953, of his sustained efforts culminating in fulfillment of his dream of establishing a man-made National Forest (Pool, 1915; 1919; 1953).

Hence I thought it better to interview or correspond with persons who had worked with him or been his students in order to learn what they considered most interesting about 'Professor' Bessey, as he was commonly designated.

The author greatly appreciates the generous aid given in preparing this presentation by all of those mentioned and others who were contacted.

EARLY CAREER

However, to summarize their impressions it is necessary to preface them with a few guiding facts about his early career. Charles Edwin Bessey, a native of Milton, Ohio, received his B.S. degree from Michigan State College in 1869. Although he had majored in engineering, he was persuaded to change to botany, a subject which had always fascinated him, and became an instructor at the Iowa State College of Agriculture at Ames in 1870. At the AAAS meeting at Dubuque in 1872 he met with Asa Gray, famous Harvard botanist; this led to two winter periods of study under him (1872-73; 1875-76). Bessey obtained his M.S. degree from his Alma Mater in 1872, and in 1873 he became professor of botany and zoology at Ames. In 1879 the University of Iowa conferred the degree of Doctor of Philosophy upon Bessey "in recognition of his publications and his services to Iowa." On December 25, 1873, he had married Lucy Athearn at West Tisbury, Martha's Vinyard, Massachusetts.

EARLY YEARS AT NEBRASKA

In 1884 Bessey accepted an offer from the University of Nebraska to become professor of botany and dean of the Industrial College, which

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included the School of Agriculture. During his years at Nebraska almost every laudatory adjective has justifiably been applied to this man's prodigious efforts in behalf of his numerous scientific and educational endeavors.

An early accomplishment was the founding of the Ancient and Mystic Order of the Sem. Bot. (Botanical Seminar) on October 11, 1886, which became a serious scientific society in 1891. To become a *candidatus* required passing written and oral tests; promotion to *novitius* and *ordinarius* might follow. Achievement of the latter entitled one to wear a chlorophyll-green scarf. Non-botanists might become honorarius members, such as zoologist, H. B. Ward and entomologist and ornithologist Lawrence Bruner. A special degree of *socius* was created to honor Bessey, and, later, Ward. A 1907 CORNHUSKER picture (p. 280-281) shows the members in full regalia; the same issue of the CORNHUSKER was dedicated to Dr. Bessey. The protocols list Roscoe Pound, Frederick Clements, A. F. Woods, Rollins A. Emerson, Elda and Leva Walker, Ernst Bessey, one of Bessey's three sons, and Raymond J. Pool as early, very active members. In records of 1906-10 we note Th. Kiesselbach, L. R. Swingle, L. L. Zook and M. H. Swenk. In more recent, incomplete records we find: T. J. Fitzpatrick, L. J. Shirk, S. Shively, George W. Beadle, G. L. Peltier, F. D. Keim, J. H. Gooding, Carl Rosenquist and Elvin F. Frolik.

Each scientific-social meeting concluded with the famous rite involving the *Canis-pie* (minced meat pie) eating, starting with the tip of the piece. The ritual and the early records of the society were sprinkled with Phraseology in Latin, one of the languages required for the Ph.D. degree. Famous guest speakers and visiting members were properly escorted from and to trains. Detailed records ceased about 1910 and the last membership list is one for 1935.

In 1897 Bessey became a charter member of our Sigma XI chapter and served as its president during 1900-02. He helped found the Nebraska Academy of Sciences in 1891 and served as its president during four years (1892-95; 1914-15).

INTEREST IN EDUCATIONAL PROBLEMS

Of deep concern to Bessey was the teaching of botany and attracting young persons to this field. In an address to the conference of botanical teaching in Minneapolis in 1910 (Bessey, 1911), dealing with the problem of obtaining instructors in botany, he first of all proposed that instead of allowing students to take "nothing but first-year work" with a "go-as-you-please arrangement," we should substitute a properly guided "logical and carefully selected sequence of studies." Also, he noted that related fields, such as agriculture, forestry and horticulture, justifiably, tended to draw students away from scientific botany and that the factor of low remuneration

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"cut as great a figure as it does elsewhere in society in selecting a vocation." Furthermore, he thought that "too great neglect of old time field botany" and "too much narrow training in botany" was a handicap, for "all phases of our science must be wrought into one science." We must early inculcate an "*esprit de corps*" among all our many students, then numbering about 350 in Nebraska classes, and select the more promising, not necessarily always the most brilliant students, to advance and to "treat botany as a profession, not merely as a subject of study."

He then stated that, unfortunately, the demand for instructors was mostly for men, "which we ought to change;" from the much greater supply of competent women, in his own experience, admirable instructors were available. According to Elda Walker — on his staff during 11 years — Bessey tried to allocate staff positions equally between the two sexes. However, he had a preference for taller applicants for the "students to look up to" she recalls.

The importance of the aforementioned "old time field botany" is well described in a letter from Leslie Zook as follows: "Botany trips with Dr. Bessey were memorable events. He never stopped talking whether walking or resting. His enthusiasm was contagious. His voice carried well, but a place close to him was a prize position. He never seemed to tire and of course students following him were reluctant to admit any weariness." And Bessey was in his sixties then!

Bessey's perennial enthusiasm is also testified to by Norma Kidd Green (Mrs. Roy Green) who writes that one day as she was coming out of the West door of West Memorial Hall she met him; he took her by the arm and excitedly insisted that she see a few stalks of rice that actually had headed during an autumn lasting longer than previous cold ones. She was more "excited by having these little moments with the great man," who presumably had not differentiated her from the mass of students. Mrs. Green also remembers his botanically directed advice: "Keep your lives as meristem tissue, so that you may grow. Never," he scornfully added, "let your attitudes become sclerenchyma tissue, hard and unchangeable."

BESSEY, THE DIPLOMATIC CRITIC

Elda Walker interestingly tells how Bessey was able to get persons to do their best by criticisms that caused them to feel flattered, as when he would say: "I did not think you could do that!"

If he found himself in error he was always most eager to make amends. Thus, when she had written from Oregon that she was shipping him a 30-foot lichen, *Usnea longissima*, Bessey, in his inimitable style, wrote and asked if she realized the value and virtue of veracity, or, could it possibly be that she was confused about the difference between feet and inches? However, having

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received the long lichen, he wrote that inasmuch as loupe examination revealed no stitching together of parts, he hereafter would believe anything she said, no matter how unreasonable!

In another illustration she tells of how, about 1911, a group of European botanists visiting Lincoln did not seem interested in seeing prairies again, having passed through several such areas en route. Bessey was not eager to have student Floyd Gail show the guests a fenced in L-shaped grove of trees at 33rd and J Streets in Lincoln, but Gail pestered him long enough to get permission. The group was amazed to see what nature could do and it was solely this revelation of how all kinds of Nebraska trees were contained in this grove, partly originated by birds carrying seeds, that resulted in praise of Nebraska by the group upon its return to Europe. Bessey admitted that he should never turn down a request by a student!

Regent W. G. Whitmore, at a Schoolmasters Club dinner in 1915, tells how Bessey, in a lecture, had voiced the generally accepted idea that the clovers could not be raised in Nebraska. However, when shown the regent's ten acres of a fine stand of clover, he was surprised and also delighted as he exclaimed: "A generally accepted theory exploded by a single fact!"

BESSEY, THE STRICT BUT BELOVED SCHOOLMASTER

Bessey's great ability to attract students to his courses may be attributed to several factors. His great ability for making friends all over Nebraska was unequalled. Parents everywhere wanted their children to take his courses, if for no other reason than to come to know him personally. His textbooks, first published in 1880 and in 1884 (Pool, 1919), were the first modern ones in that field available to generations of future teachers. Perhaps it was most characteristic of him to insist upon teaching the beginning courses personally. Val Kuska tells of how Bessey would stand inside the classroom door and at 8:00 A.M. promptly turn the key, for, as he said, his classes did not start at 8:01! He presented his material in a very clear, perhaps childishly simple form, aided by his own drawings on the blackboard; both, according to Elda Walker, were greatly appreciated. H. C. Filley, another Bessey contemporary, amplifies this by writing me: "He was always Dr. Bessey — and he had an individual way of setting forth his ideas, and made them interesting." Kuska also tells of how his teacher refused to read four-line answers when three-line ones were called for; however, he would read two-line answers because the student might have something better than he did.

BESSEY, IDOL OF THE ALUMNI

To gain further insight into Bessey's academic work, let us make an imaginary afternoon call at his office in University Hall. Having noted the

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admonition "BUSY" under his name on the door, we are encouraged to enter by the words "COME IN" below this, designating a spirit of welcome (recalled by Kiesselbach to H. O. Werner). However, upon entering — as we see him in the picture in the Semi-Centennial Anniversary Book of the University of Nebraska (1919) — we wonder which one of the numerous matters on his crowded desk he is pondering. Is he readying the final plans for the badly needed expanded botany quarters? Is he writing one of his many book-reviews for SCIENCE, a report for the Nebraska State Board of Agriculture, one on some research project, or is he evaluating a research article of a budding botanist so that the author may feel encouraged by Bessey's criticism, always tempered with kindness? Is he trying to put into words an assessment of a student's qualifications for a recommendation for a position? According to Zook "his recommendations were prizes in composition for what they contained and did not contain. He could always find something good to say about anyone, but did not indulge in flattery or depart from the truth. That is, he would make even a poor student feel good, but still wishing that he had tried harder." Kuska states that one who had taken Bessey's courses was 90 percent qualified for a position with the United States Department of Agriculture, which, according to one report, at one time employed 19 of his students. Or, finally, is Bessey looking into one of the books in which he kept records, five to a page, of the doings of former students. Rarely, if ever, would one of his 'boys' stop in Lincoln without entering the door for a welcome chat in Bessey's inner sanctum.

BESSEY, THE MASTER BOTANIST

In concluding my remarks on Bessey, I first of all wish to stress that when he came here he was like a bridegroom promising from now on to forsake all others and to cling to Nebraska. He did this in spite of flattering financial offers to lure him away from his unflagging zeal to serve his adopted, beloved state.

Filley thinks of Bessey "as the greatest scientist who has been a member of the University of Nebraska faculty since I came here as a student in 1901 and as one of the half dozen faculty members who was best remembered and most admired by the students who knew him." Amens to this have been voiced by all those contacted by me.

Now, which of the numerous honors conferred upon Bessey here and abroad did he value the most? Was it the ovation by the students, the faculty and the regents given him in the University Chapel upon his return from the AAAS meeting in Washington, D.C., where as the Association's president he had guided its deliberations in 1912? In my opinion he treasured even more the testimonial Botanical Seminar banquet on July 5, 1909, celebrating the twenty-fifth anniversary of his professorship in Nebraska, for it was on this

occasion that Bessey was presented with a set of 24 volumes containing the publications of his former students (Anon., 1909).

To try further to ascertain the influence of Bessey upon botanical science of today, I am privileged to present a statement submitted to me by Professor of Botany, John F. Davidson, as follows: "As a plant taxonomist, looking back on the contributions of C. E. Bessey, from a distance of 50 years, his major contributions appear to be the formulation of a phytogenetic system of plants. However, this will undoubtedly be superceded as time goes by, and even at present it would appear that Bessey's greatest contribution to science will probably be his inspiration to his students. Fully one-fifth of Bessey's graduate students achieved national if not international prominence, so that the impact of these men, and their students' students, will be far, far greater than anything any one man, even C. E. Bessey, could possibly hope to accomplish. Bessey had the ability, not to strike sparks from his students, but to kindle a flame of enthusiasm, which kept burning long after the student had left Nebraska. Several generations later these flames, originally kindled by Bessey, are shedding light on botanical problems throughout the world." (March 8, 1967).

SOME FITTING TRIBUTES

Anyone further interested in obtaining evidence of the esteem in which this famous scholar was held may profitably visit the alcove between the first and second floor stairs at the East end of Bessey Hall. Here on display is a beautiful, life-size bas-relief bronze tablet depicting Dr. Bessey in a characteristic profile pose, holding in his hand the plant *Besseyia alpina*. The border of the tablet is wrought in letters spelling out the names of certain other plants which have been named after this famous botanist. The tablet carries the inscription: "TO THE MEMORY OF CHARLES EDWIN BESSEY SCHOLAR BOTANIST EDUCATOR 1845-1915. THIS TABLET IS PRESENTED BY MR. J. P. O'GARA, HIS FORMER STUDENT." The donor, Dr. O'Gara, a well known plant pathologist, received the bachelor of science degree in 1903 and an honorary doctor of science degree at the University of Nebraska in 1917. (An obituary of Dr. O'Gara by Dr. R. J. Pool was published in the Nebraska Alumnus, October, 1927).

The legislature of the State of Nebraska on April 19, 1917, Chapter 239, appropriated the sum of four thousand dollars for the creation of a Bessey Memorial Fund, based on the premise that: "Said fund shall be and constitute a perpetual memorial fund evidencing the high esteem in which the people of this state held the memory of the late Professor Charles E. Bessey, who for more than thirty years was closely identified with our state university as Professor of botany, Dean of its agricultural college, Dean of Deans, and

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repeatedly for years its acting chancellor. He was a conspicuous figure in American science and education, one of the great teachers of his age, whose work and spirit have been the inspiration of thousands of students, a leader in the development of scientific agriculture, and the value of whose life and service to Nebraska and the West cannot be estimated in terms of money."

Additional funds were obtained following a previous appeal by George E. Hall to friends of Dr. Bessey, which appeal stated in part: "One of the purposes of the Memorial is to provide an adequate income for Mrs. Bessey so long as she shall live.

The Bessey Memorial Association was organized for the purpose of establishing a living, working memorial to the memory of the scientist whose life was the unfolding of that vital energy which made him one of the world's greatest leaders in botany."

The income from the established Bessey Memorial Fund — with additions from other sources — shall be available for annual payments to Mrs. Bessey during her life time, and upon her death to "such other of the widows and dependents of deceased professors as shall have acceptably served said university for a period of at least twenty-five years." All unused funds and securities shall be in the custody of the State Treasurer and the Board of Regents shall constitute a commission and "shall have the control, general charge, management and disposition of the memorial fund." In disposing of surplus funds it "shall exercise its best judgement taking into consideration all the facts and circumstances of the case." Currently, one widow is drawing benefits from this fund.

A third and very personal appreciation of Dr. Bessey was given at the end of his paper by his student and successor, Dr. Raymond J. Pool (1919).

No more fitting lines apply to Bessey than the two by Halleck on the death of Joseph Rodman Drake in 1820:

Nore named thee but to praise."
"None knew thee but to love thee,
Nore named thee but to praise."

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